

Claims

- [c1] 1. A tool for removing particles from a reticle, comprising:
at least a gas spray member, directed toward a surface of the reticle for removing particles; and
a supporting member supporting the gas spray member, disposed in front of a particle detector.
- [c2] 2. The tool of claim 1, wherein the gas spray member includes a plurality of multi-directional gas spray heads, and each of the multi-directional gas spray heads has a plurality of gas spray holes with different orientations.
- [c3] 3. The tool of claim 2, wherein the gas spray member includes:
a main body, having a gas supply inlet and a plurality of holes connecting with the gas supply inlet thereon, each of the holes corresponding to one of the multi-directional gas spray heads, and each of the holes having a slant sidewall; and
a plurality of plugs, each embedded in one of the holes, wherein a plurality of longitudinal grooves are disposed around each plug, so that a plurality of gas supply channels are formed between the main body and the plug

connecting the gas supply inlet and the gas sprayholes.

- [c4] 4. The tool of claim 3, wherein each of the plugs has a domed top.
- [c5] 5. The tool of claim 2, wherein each of the multi-directional gas spray heads has four gas spray holes with four different orientations.
- [c6] 6. The tool of claim 1, wherein the supporting member fixes the tool onto the pellicle particle detector.
- [c7] 7. The tool of claim 1, wherein the gas spray member is connected with a particle filter.
- [c8] 8. A tool for removing particles from a reticle, comprising:
two gas spray members, allowing the reticle to pass through between them and being directed toward a top surface and a bottom surface respectively of the reticle for removing particles; and
a supporting member, supporting the two gas spray members in front of the pellicle particle detector.
- [c9] 9. The tool of claim 8, wherein each of the two gas spray members includes a plurality of multi-directional gas spray heads thereon, and each of the multi-directional gas spray heads has a plurality of gas spray holes with

different orientations.

[c10] 10. The tool of claim 9, wherein each of the two gas spray members includes:
a main body, having a gas supply inlet and a plurality of holes connecting with the gas supply inlet thereon, each of the holes corresponding to one of the multi-directional gas spray heads, and each of the holes having a slant sidewall; and
a plurality of plugs, each embedded in one of the holes, wherein a plurality of longitudinal grooves are disposed around each plug, so that a plurality of gas supply channels are formed between the main body and the plug connecting the gas supply inlet and the gas spray holes.

[c11] 11. The tool of claim 10, wherein each of the plugs has a domed top.

[c12] 12. The tool of claim 9, wherein each of the multi-directional gas spray heads has four gas spray holes with four different orientations.

[c13] 13. The tool of claim 8, wherein the two gas spray members are connected to a particle filter.

[c14] 14. The tool of claim 8, wherein the supporting member fixes the tool onto the pellicle particle detector.

[c15] 15. A process, for removing particles from a reticle using a pellicle particle detector and a particle removing tool disposed in front of the pellicle particle detector, the particle removing tool including at least one gas spray member directed toward a surface of the reticle for removing particles, the process comprising:

- (a) loading the reticle into the pellicle particle detector through the gas spray member to detect whether the reticle has particles thereon;
- (b) ejecting the reticle from the pellicle particle detector; and
- (c) turning on the particle removing tool when particles are detected on the reticle, and going back to step (a); and ending the particle removal process when no particle is detected on the reticle.

[c16] 16. The process of claim 15, wherein the particle removing tool includes two gas spray members allowing the reticle to pass through between them, and the reticle is loaded into the pellicle particle detector through between the two gas spray members.

[c17] 17. The process of claim 15, wherein a pellicle on the reticle faces down when the reticle is loaded into the pellicle particle detector through the gas spray member.

[c18] 18. The process of claim 15, further comprising a step of

using a robot arm to move the reticle.